

Two New Species of the Genus *Cybaeus* (Araneae: Cybaeidae) from the Chugoku District, Honshu Japan

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の 2 新種

Abstract Two new species of the spider genus *Cybaeus* are described from the Chugoku district, western Honshu, Japan, under the names *C. hibaensis* and *tottoriensis*. These species are medium or slightly small in size and pale in color compared to other species of Japanese *Cybaeus*. Their distributions show allopatric pattern each other; the former is distributed in central part of the Chugoku district, and the latter in northeastern part.

Cybaeus is a large genus of spiders with 42 described and a large number of undescribed species in Japan, and each species often has a limited distributional area. During a biogeographical survey of the spiders in the Chugoku district, western Honshu, Japan, I have found more than twenty species of the genus, including many undescribed ones. In my previous paper (IHARA 1993), I described five new small-sized species among them. As the second paper in the serial work, I will describe here two additional species of this genus, which are medium or slightly small in size and pale in coloration, as new to science. They are distributed in central and northeastern parts of the Chugoku district, though they are allopatric with each other in the area.

The type and voucher specimens are deposited in the National Science Museum (Natural History), Tokyo. Other specimens are in my personal collection.

Abbreviation used: NT=Nobuo TSURUSAKI, KN=Kôichi NOJIMA, YI=Yoh IHARA.

Cybaeus hibaensis sp. nov.

(Figs. 1-9)

Description. Male (holotype). Measurements (in mm). Body length 4.5; carapace length 2.34, width 1.66; abdomen length 2.1, width 1.8; sternum length 1.16, width 1.10. Length of legs (femur/patella/tibia/metatarsus/tarsus; total): Leg I: 1.96/0.74/1.80/1.66/1.06; 7.22. Leg II: 1.90/0.72/1.62/1.62/1.02; 6.88. Leg III: 1.70/0.68/1.24/1.60/1.00; 6.22. Leg IV: 2.00/0.70/1.76/2.04/1.14; 7.64.

Carapace relatively short, ratio of width to length 0.71. Cephalic region rela-

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tively narrow. Anterior eye row straight as seen from front, posterior eye row recurved as seen from above. Diameter of eyes: anterior median eyes < posterior median eyes < posterior lateral eyes \approx anterior lateral eyes; anterior median eyes more than half to posterior median eyes and less than half to the others. Ocular area wider than long, 2.4: 1 in ratio. Clypeus as long as length of median ocular area. Chelicera geniculate, promargin of fang furrow with 3 teeth, retromargin with 3 teeth and 4 denticles, and basally with lateral condyle. Sternum slightly longer than wide, anterior margin undulate. Labium wider than long, 1.3: 1 in ratio. Length of legs: $4 > 1 > 2 > 3$. Tibia I with 2-2-2 ventral spines and 2 prolateral spines; metatarsus I with 2-2-2 ventral spines, 1 prolateral spine and 1 retrolateral spine; tibia II with 2-2-1 (retromargin)-0 ventral spines and 2 prolateral spines; metatarsus II with 2-2-3 ventral spines and 2 prolateral spines.

Palp (Figs. 2-5). Rather stout, cymbium relatively short, tibia shorter than patella. Patella retrolaterally with a large apophysis, with 8 or 9 teeth. Genital bulb circle, and relatively large. Apex of conductor thick.

Coloration: Carapace light yellowish brown, anterior half darker. Chelicerae, maxillae and labium yellowish brown; chelicerae darker than the others. Sternum light yellowish brown. Legs light yellowish brown, without annulation. Abdomen uniformly yellowish white.

Female. Measurements (in mm; one of the paratypes). Body length 5.2; carapace length 2.54, width 1.72; abdomen length 2.8, width 2.1; sternum length 1.18, width 1.14. Length of Legs (femur/patella/tibia/metatarsus/tarsus; total): Leg I: 1.86/0.72/1.66/1.52/1.00; 6.76. Leg II: 1.78/0.62/1.48/1.46/0.98; 6.32. Leg III: 1.58/0.60/1.16/1.46/0.88; 5.68. Leg IV: 1.86/0.68/1.68/1.86/1.02; 7.10.

Similar to male in coloration. Carapace more slender, abdomen larger and more rounded, legs shorter than those of male.

Genitalia (Figs. 6-7). Epigynum simple, medially with a swollen epigynal plate, posteriorly with an opening of genital atria. Internal structure indistinctly seen through the integument. Internal genitalia as shown in Fig. 7.

Variation. Body size (in mm, means in parentheses; male $n=6$, female $n=13$): Body length, 3.5-5.0 (4.25) in male, 4.1-5.3 (4.76) in female; carapace length, 1.78-2.38 (2.13) in male, 2.02-2.54 (2.31) in female; carapace width, 1.30-1.82 (1.55) in male, 1.44-1.94 (1.61) in female.

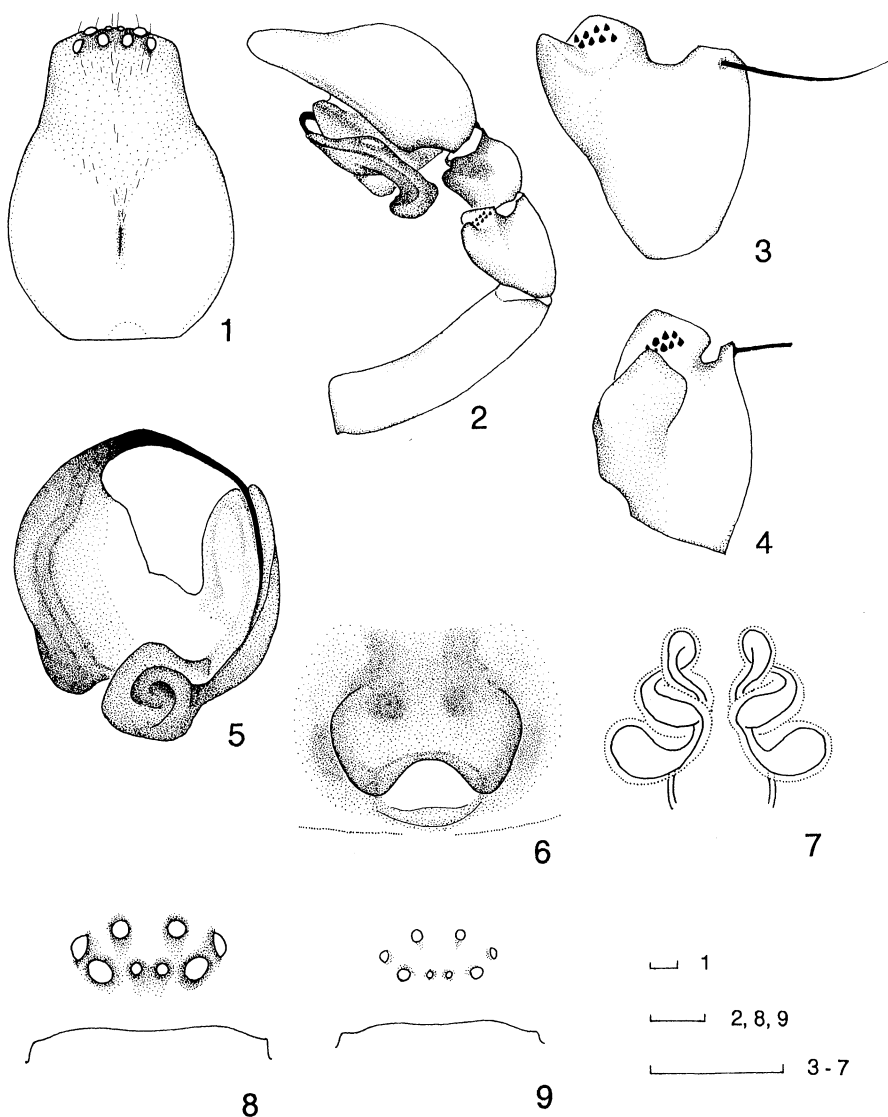
The specimens collected from Ja-no-ana Cave, Yoshii-chô, Okayama Pref., possessed reduced eyes (Fig. 9).

Specimens examined. Type series. Mt. Tateeboshi, Saijô-chô, Hiba-gun, Hiroshima Pref., Japan: holotype (♂), 10-X-1989, YI; paratypes (2♀), 27-IX-1992, YI; paratype (1♀), 5-IX-1993, YI.

Voucher specimens. Ja-no-ana Cave, Yoshii-chô, Shitsuki-gun, Okayama Pref., 1♂, 31-XII-1989, KN; 1♀, 31-XII-1989, YI; 1♀, 17-X-1993, YI.

Other specimens. HIROSHIMA PREF.: Hiba-gun: Takano-chô, Mt. Yubitan, 1♂, 2-IV-1989, YI; Hiwa-chô, Mt. Azuma, 2♀, 12-XI-1990, YI; Saijô-chô, Rokunohara, 1♀, 14-IV-1991, YI. SHIMANE PREF.: Iishi-gun, Tonbara-chô, Mt. Ôyorogi, 1♀, 18-X-1992, YI. Hikawa-gun: Koryô-chô, Kamihata, 1♂, 25-XII-1988, YI. Hikawa-chô, Kanbadani, 1♀, 17-III-1993, YI. Yatsuka-gun: Yakumo-son, Sudani, 1♀, 26-IV-1990, YI; Higashiizumo-chô, Konpira Shrine, 1♂1♀, 10-I-1991, YI. Nita-gun: Yokota-chô, Mt. Sentsû, 1♀, 12-XI-1989, YI.

Nita-chô, Mt. Tamamine Forest Park, 1♀, 23-IX-1991, YI. OKAYAMA PREF.: Niimi-shi, Kômoriana Cave, 2♀, 28-XII-1967, Tadashi OKAMOTO, (preparations on the slides of female genitalia in the collection of Dr. Takeo YAGINUMA). Atetsugun, Ôsa-chô, Sadatô, 1♂1♀, 23-XI-1984, Keiichi MASHIBARA.



Figs. 1-9. *Cybaeus hibaensis* sp. nov.—1, Male carapace, dorsal view. 2-5, Left male palp: 2, retrolateral view; 3, patella, dorsolateral view; 4, patella, ventrolateral view; 5, apical part of the bulb, ventral view. 6-7, Female genitalia: 6, epigynum, ventral view; 7, internal structure, dorsal view. 8-9, Male eyes, frontal view. (1-5, 8, Holotype; 6-7, paratype; 9, male from Ja-no-ana Cave. Scale: 0.2 mm.)

Distribution. Northeastern part of Hiroshima Pref. (Hiba-gun), eastern part of Shimane Pref. and western part of Okayama Pref., western Honshu (Fig. 17).

Remarks. Male palp of this species resembles that of *Cybaeus okafujii* YAGINUMA, 1963 in the shape of cymbium and tibia, and in having several blackish teeth on the patellar apophysis. Furthermore, they are allopatric with each other. These facts suggest these two species are closely related, though *C. hibaensis* can be easily distinguished from *C. okafujii* by the shape of unique patellar apophysis and conductor of male palp, and female genitalia.

On the other hand, this species also has affinities with *C. tottoriensis*, which will be described next, in body size and habitat. An allopatric pattern of distribution showed by the two species also favors an idea that they might be vicariants. However, their palpi of males, which differ considerably one another, suggest that they are not closest relatives.

***Cybaeus tottoriensis* sp. nov.**

(Figs. 10–16)

Cybaeus sp. (C): NISHIKAWA and KAWANAKA, 1973, p. 218, fig. 11.

Description. Male (holotype). Measurements (in mm). Body length 4.9; carapace length 2.44, width 1.66; abdomen length 2.5, width 1.9; sternum length 1.26, width 1.10. Length of legs (femur/patella/tibia/metatarsus/tarsus; total): Leg I: 1.94/0.78/1.78/1.68/1.08; 7.26. Leg II: 1.88/0.76/1.58/1.56/1.00; 6.78. Leg III: 1.70/0.70/1.28/1.50/0.86; 6.04. Leg IV: 2.06/0.70/1.78/2.18/1.08; 7.80.

Carapace relatively slender, ratio of width to length 0.68. Lateral margins of thoracic region slightly angular. Anterior eye row almost straight as seen from front, posterior eye row slightly recurved as seen from above. Anterior median eyes smallest, diameter less than half to the others. The other eyes subequal. Ocular area twice as wide as long. Clypeus shorter than median ocular area. Chelicera geniculate, promargin of fang furrow with 3 teeth (median one the largest), retro-margin with 3 teeth and 5 denticles, and basally with lateral condyle. Sternum longer than wide, anterior margin undulate. Labium wider than long, 1.3:1 in ratio. Length of legs $4 > 1 > 2 > 3$. Tibia I with 2–2–2–2 (right; 2–2–1–2) ventral spines, 2 prolateral spines and 1 retrolateral spine (left); metatarsus I with 2–2–2 ventral spines, 1 prolateral spine and 1 retrolateral spine; tibia II with 2–2–1 (retro-margin)–2 ventral spines and 2 prolateral spines; metatarsus II with 2–2–3 ventral spines, 1 prolateral spine and 1 retrolateral spine (right). Abdomen with relatively long hairs.

Palp (Figs. 11–14). Cymbium relatively slender, tibia longer than patella. Tibial apophysis about half length to tibia. Patella retrolaterally with extended apophysis with conical teeth. Genital bulb oval. Conductor simple.

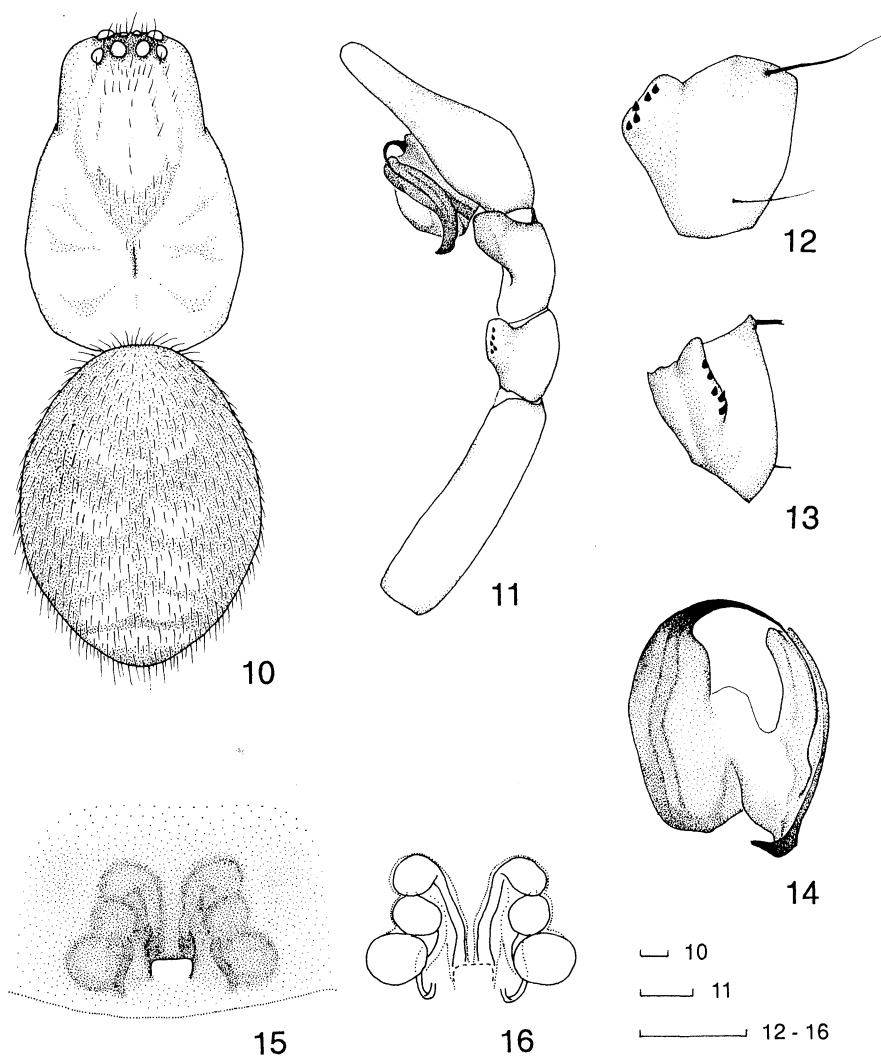
Coloration. Carapace orange yellow with a faint grayish V-shaped marking. Chelicerae, maxillae, labium and sternum yellowish brown; chelicerae darker than the others. Legs yellowish brown without annulation. Spines of legs reddish brown. Abdomen light grayish brown and dorsally with some pale yellow spots.

Female. Measurements (in mm; paratype). Body length 5.1; carapace length 2.26, width 1.48; abdomen length 3.0, width 2.2; sternum length 1.10, width 0.96.

Length of legs (femur/patella/tibia/metatarsus/tarsus; total): Leg I: 1.62/0.68/1.34/1.20/0.70; 5.54. Leg II: 1.50/0.68/1.20/1.14/0.70; 5.22. Leg III: 1.34/0.60/0.96/1.18/0.66; 4.74. Leg IV: 1.64/0.62/1.36/1.62/0.80; 6.04.

Similar to male in coloration. Carapace more slender, abdomen larger and more rounded, legs shorter than those of male.

Genitalia (Figs. 15–16). Epigynum simple, posteriorly with a small opening of



Figs. 10–16. *Cybaeus tottoriensis* sp. nov. —10, Male body, dorsal view. 11–14, Left male palp: 11, retrolateral view; 12, patella, dorsolateral view; 13, patella, ventrolateral view; 14, apical part of the bulb, ventral view. 15–16, Female genitalia: 15, epigynum, ventral view; 16, internal structure, dorsal view. (10–14, Holotype; 15–16, paratype. Scale: 0.2 mm.)

genital atria, internal structure visible through the integument. Internal genitalia as shown in Fig. 16.

Variation. Body size (in mm, means in parentheses; male $n=7$, female $n=10$): Body length, 4.4–5.4 (4.76) in male, 4.6–5.8 (4.97) in female; carapace length, 2.24–2.58 (2.39) in male, 2.16–2.38 (2.26) in female; carapace width, 1.46–1.78 (1.62) in male, 1.30–1.52 (1.44) in female.

No prominent variation was found in the morphology of male palp and female genitalia both within and among populations.

Specimens examined. Type series. Ashizu Valley, Chizu-chô, Yazu-gun, Tottori Pref., Japan: holotype (♂) and paratype (♀), 14-X-1990, KN.

Other specimens. TOTTORI PREF.: Tottori-shi, Ôchidani, 2♂1♀, 22-XI-1991, NT. Kurayoshi-shi, Mt. Utsubuki, 1♂, 9-I-1994, NT. OKAYAMA PREF.: Maniwa-gun: Chûka-son, Tsuguro Highlands, 3♀, 9-X-1990, KN; Chûka-son, Mt. Yamanori, 1♂, 29-X-1990, KN; Yubara-chô, Shirane Valley, 1♂3♀, 19-XI-1989, KN. Tomata-gun, Kamisaibara-son, Onbara Highlands: 1♂1♀, 16-X-1989, NT; 1♀, 12-XI-1989, KN. Aida-gun, Nishiawakura-son, Wakasugi, 1♀, 14-XI-1992, KN.

Distribution. Tottori Pref. and northern part of Okayama Pref., western Honshu (Fig. 17).

Remarks. This species resembles *Cybaeus kiuchii* KOMATSU, 1965, which is distributed in Honshu and Shikoku and is sympatrically found with *C. tottoriensis* in Tottori Prefecture (KOMATSU, 1965; IHARA, unpublished data), in general appearance. However, *C. tottoriensis* can be distinguished from *C. kiuchii* by the shape of male

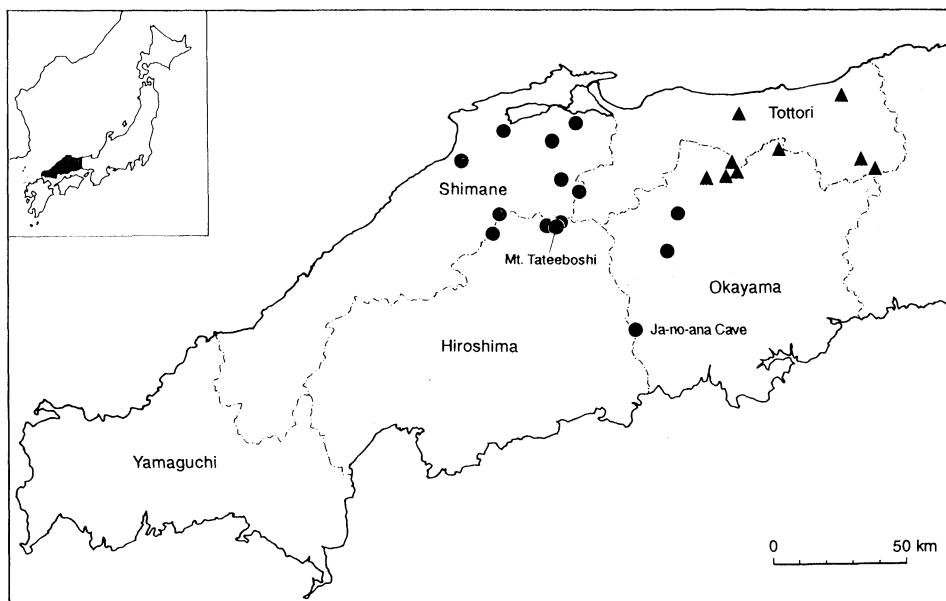


Fig. 17. Distribution of two species of *Cybaeus*. Circles: *C. hibaensis*. Triangles: *C. tottoriensis*.

palp, especially by its patellar apophysis, and by female genitalia.

This species was first recorded from Hiruzen, northern Okayama Pref., as *Cybaeus* sp. (C) by NISHIKAWA and KAWANAKA (1973).

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摘 要

本州中国地方産の *Cybaeus* (ナミハグモ属) の 2 新種, *C. hibaensis* ヒバナミハグモ (新称), *C. tottoriensis* イナバナミハグモ (新称) を記載した. いずれも, 中型からやや小型で体色の淡い種である. また, 分布は互いに異所的で, それぞれ中国地方の中中部 (広島・島根両県の東部および岡山県西部) と北東部 (鳥取県および岡山県北部) に分布する.

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